FT 12

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT RECD **3 1 MAR 2005**

WIPO   PCT
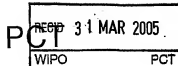
WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference		**FOR FURTHER ACTION**
see form PCT/ISA/220		See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2004/038198	15.11.2004	01.12.2003

International Patent Classification (IPC) or both national classification and IPC
H04L12/28, H04L12/56, H04Q7/38, H04L1/00, H04L27/26, H04L1/06, H04B7/26

Applicant
QUALCOMM INCORPORATED

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1. This opinion contains indications relating to the following items:

   ☒ Box No. I   Basis of the opinion

   ☐ Box No. II   Priority

   ☐ Box No. III   Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

   ☐ Box No. IV   Lack of unity of invention

   ☒ Box No. V   Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

   ☐ Box No. VI   Certain documents cited

   ☐ Box No. VII   Certain defects in the international application

   ☒ Box No. VIII   Certain observations on the international application

2. **FURTHER ACTION**

   If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

   If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

   For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:	Authorized Officer
European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Gavin Alarcon, O Telephone No. +49 89 2399-7012

Box No. I   Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This opinion has been established on the basis of a translation from the original language into the following language   , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material:

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material:

      ☐ in written format

      ☐ in computer readable form

   c. time of filing/furnishing:

      ☐ contained in the international application as filed.

      ☐ filed together with the international application in computer readable form.

      ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

Box No. V   Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	2-8,10-19,21-24,26-29,31-36,38-45
	No:	Claims	1,9,20,25,30,37
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-45
Industrial applicability (IA)	Yes:	Claims	1-45
	No:	Claims	

2. Citations and explanations

   see separate sheet

Box No. VIII   Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

   see separate sheet

Re Item V

0.   Reference is made to the following documents:

D1: WO 03/010984 A (NORTEL NETWORKS LIMITED) (2003-02-06)
D2: US 2002/071445 A1 (WU GENG ET AL) (2002-06-13)

INDEPENDENT CLAIM 1

1.   The present application does not meet the criteria of Article 33(1) PCT, because the
subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

1.1   The document D1 discloses (the references in parentheses applying to this
document):

a method for processing information in a communication system (page 25, line 23 to
page 26, line 4).

The method of D1 comprises the following steps (page 25, line 23 to page 26, line 4):

a)   partitioning a control channel ("common control channel", in particular page 10, lines
21-26, "common power control channel F-CPCCH") used for transmitting control
information ("control information") into a plurality of subchannels (page 10, lines 21-
26, "the F-CPCCH is [...] defined with 24 bits in each time slot, so that a respective bit
in successive time slots can constitute a sub-channel for controlling reverse link
power of a respective MS", page 13, line 24-25, "power control subchannel"), each
subchannel being operated at a specific data rate ("first rate of transmission",
"second rate of transmission", in particular page 11, lines 8-11, "full rate" and page
11, lines 21-22, "lower or reduced rate", page 13, line 24-25, "reduced rate power
control subchannel"); and

b)   selecting, for each of one or more user terminals ("plurality of mobile stations MS",
"first set of mobile stations", "second set of mobile stations"), one of the subchannels
to be used for transmitting control information from an access point ("network

apparatus", in particular "base station BS") to the respective user terminal ("mobile station MS"), based on one or more selection criteria (page 11, lines 5-11, "the MS of an active user in the active state operates at the full rate, [...] monitoring its assigned sub-channel of the F-CPCCH at the full rate", page 13, line 20 to page 14, line 2, "for an MS in the control hold state, the shared F-CPCCH contains power control information for the MS at a reduced rate of 1/4 as shown in Fig. 2. [...] Other bits in the time slots of the F-CPCCH are used for power control of other MSs of active users either in the active state [...] or similarly in the control hold state"); and

c)   transmitting control information from the access point ("BS") to a particular user terminal ("MS") on a particular subchannel ("power control subchannel") selected for the respective user terminal (page 25, line 26 to page 26, line 2, "transmitting control information to a first set of mobile stations at a first rate of transmission via the common control channel; and transmitting control information to a second set of mobile stations at a second rate of transmission via the common control channel, the second rate of transmission being less than the first rate of transmission").

Therefore claim 1 is not new (Article 33(2) PCT).

INDEPENDENT CLAIM 20

2.   The objection and reasoning stated in paragraph 1 apply to claim 20, which merely claims the means to perform all the method steps defined in claim 1. Claim 20 is therefore not new (Article 33(2) PCT).

INDEPENDENT CLAIM 30

3.   The objection and reasoning stated in paragraph 1 apply to claim 30, which merely claims the means to perform some of the method steps defined in claim 1, namely the steps b) and c) stated in paragraph 1.1. Claim 30 is therefore not new (Article 33(2) PCT).

INDEPENDENT CLAIM 37

4. The objection and reasoning stated in paragraph 1 apply to claim 37, which merely claims the medium including the computer programm to perform all the method steps defined in claim 1. Claim 37 is therefore not new (Article 33(2) PCT).

INDEPENDENT CLAIM 9

5.1 Claim 9 contains the following additional features with respect to claim 1:

i) the control information includes resource allocation information; and
ii) the user terminal decodes one or more subchannels of the plurality of subchannels to obtain control information designated for the user terminal.

5.2 Features i) and ii) are however not new for the following reasons:

5.3 Feature I) is already disclosed in D1, see page 10, lines 21-26 (resource = reverse link power of a respective MS").

5.4 Additionally, feature ii) can be also found in D1, see page 11, lines 5-11 ("the MS of an active user in the active state operates at the full rate, [...] monitoring its assigned sub-channel of the F-CPCCH at the full rate [...] for power control of its transmissions on the reverse link") and page 13, lines 20-27 ("for an MS in the control hold state, the shared F-CPCCH contains power control information for the MS at a reduced rate of 1/4 [...]. The MS in the control hold state monitors only these bits of the reduced rate power control sub-channel assigned to it [...], and uses this information in known manner to control the power of its transmissions on the reverse link channels").

5.5 Due to the reasons stated in paragraphs 5.1-5.4 and 1 the subject-matter of claim 9 is not new (Article 33(2) PCT).

INDEPENDENT CLAIM 25

6. The objection and reasoning stated in paragraph 5.1-5.5 and 1 apply to claim 25, which merely claims the means to perform all the method steps defined in claim 9. Claim 25 is therefore not new (Article 33(2) PCT).

INDEPENDENT CLAIM 43

7.   The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 43 does not involve an inventive step in the sense of Article 33(3) PCT.

7.1   The document D1 is regarded as being the closest prior art to the subject-matter of claim 43, and discloses (the references in parentheses applying to this document):

a method for processing information in a system. The method of D1 comprises the following steps:

d)   receiving information ("power control information", page 7, lines 14-17, "the terminal is further operable in said first state to receive and respond to power control information at the first rate and in said second state to receive and respond to power control information at the second rate") on one or more control subchannels ("power control subchannel") each of which being operated at a specific data rate (page 10, lines 21-26, "the F-CPCCH is [...] defined with 24 bits in each time slot, so that a respective bit in successive time slots can constitute a sub-channel for controlling reverse link power of a respective MS", page 13, line 24-25, "power control subchannel", page 11, lines 8-11, "full rate" and page 11, lines 21-22, "lower or reduced rate", page 13, line 24-25, "reduced rate power control subchannel"); and

e)   decoding ("detect") the one or more control subchannels to obtain control information designated for a particular user terminal (page 11, lines 5-11, "the MS of an active user in the active state operates at the full rate, continuously [...] monitoring its assigned sub-channel of the F-CPCCH at the full rate [...] for power control of its transmissions on the reverse link"; page 13, line 20 to page 14, line 2, "for an MS in the control hold state, the shared F-CPCCH contains power control information for the MS at a reduced rate [...]. The MS in the control hold state monitors only [...] the reduced rate power control sub-channel assigned to it [...], and uses this information in known manner to control the power of its transmissions on the reverse link channels).

7.2   The method of claim 43 differs from the one of D1 in that:

iii)   the decoding step starts with a subchannel operated at a lowest data rate; and

iv)   the decoding step ends when at least one of a plurality of conditions is met.

7.3   However the aforementioned differences iii) and iv) cannot be considered as involving an inventive step for the following reasons:

7.4   Concerning difference iii), the fact that the decoding step starts with a sub-channel operated at a lowest data rate is just one option among a set of well-known possibilities and therefore does not require any inventive skill.

7.5   WIth regard to difference iv), it is obvious to those skilled in the art of communications that the decoding procedure does not last forever and terminates somehow.

7.6   Due to the reasons stated in paragraphs 7.1-7.5 claim 43 is not inventive (Article 33(3) PCT).

INDEPENDENT CLAIM 34

8.   The objection and reasoning stated in the whole paragraph 7 apply to claim 34, which merely claims the means to perform all the method steps defined in claim 43. Claim 34 is therefore not inventive (Article 33(3) PCT).

INDEPENDENT CLAIM 40

9.   The objection and reasoning stated in the whole paragraph 7 apply to claim 40, which merely claims the medium including the computer programm to perform all the method steps defined in claim 43. Claim 40 is therefore not inventive (Article 33(3) PCT).

DEPENDENT CLAIMS 2-8, 10-19, 21-29, 31-33, 35-36, 38-39, 41-42 and 44-45

10.   Dependent claims 2-8, 10-19, 21-29, 31-33, 35-36, 38-39, 41-42 and 44-45 do not

contain any features which, in combination with the features of any claim to which
they refer, meet the requirements of the PCT in respect of novelty and/or inventive
step. The reasons are as follows:

10.1 The features of all these claims are regarded as well-known constructional details of
communication systems which, like the system of D1, provide a downlink control
channel and use the Adaptive Modulation and Coding (AMC) feature. All these
features are for instance disclosed in document D2, see the following passages:

claims 10-14, 26-27, 35, 41 and 44: paragraphs 29-30 ("acknowledge receipt");
claims 15-18, 28, 36, 42 and 45: paragraphs 29-30 (proper receipt"); claims 8, 19, 24,
29, 33 and 39: paragraphs 22-23, ("scheduling based on the received CQR, channel
quality report"); claims 2-4, 21, 31 and 38: paragraphs 26-27 ("rate group"); claims 5-
7, 22-23 and 32: paragraph 30 ("a lower rate").

The subject-matter of all these claims is therefore not inventive (Article 33(3) PCT).

Re Item VIII

11.   Although claims 1 and 9 have been drafted as separate independent claims, they
appear to relate effectively to the same subject-matter. Hence, the aforementioned
claims and their corresponding dependent claims lack conciseness and as such do
not meet the requirements of Article 6 PCT.

12.   The objection stated in paragraph 11 applies also to claims 20, 25 and 30 and their
corresponding dependent claims.

13.   The vague and imprecise statements ("spirit [...] of the invention", "principles and
novel features disclosed herein") in the description on page 33 imply that the subject-
matter for which protection is sought may be different to that defined by the claims,
thereby resulting in lack of clarity (Article 6 PCT) when used to interpret them.